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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/164,580      | 10/01/1998  | RICHARD W. ARNOLD    | TI-22561            | 6836             |

23494 7590 02/27/2003

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EXAMINER

MITCHELL, JAMES M

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2827

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                            |                  |
|------------------------------|----------------------------|------------------|
| <b>Office Action Summary</b> | Application No.            | Applicant(s)     |
|                              | 09/164,580                 | ARNOLD ET AL.    |
|                              | Examiner<br>James Mitchell | Art Unit<br>2827 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 22 July 2002.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-4,9-16 and 22-31 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-4,9-16 and 22-31 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

|  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

In view of the appeal brief filed on July 22, 2002, PROSECUTION IS HEREBY REOPENED. A new ground of rejections is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11, 12, 15 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Silicon and an insulation layer are mutually exclusive.

### ***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Buck et al. (US 5,489,854).

Buck et al. (Fig 1, 3,5) discloses an apparatus for testing a semiconductor die which comprises a package having a cavity therein, a plurality of terminals (10) in said package, a semiconductor die (18) having bond pads thereon (Fig 6; not labeled on top and bottom of chip) disposed in said cavity, an interconnecting layer (14) inherently disposed in said cavity (i.e. forms cavity) having electrically conductive paths (8) thereon having a first and second spaced apart region thereon, said first region of each path being aligned with and contacting said bond pad (via item 10), said first region including a compliant bump probe tip (10) having a first predetermined height above said layer and further including a standoff (26) on said layer having a second predetermined height above said layer less than said first height an interconnection (16) between said second spaced apart region of each of said paths and one of said plurality of terminals; wherein each path is bump aligned via bump terminal formed in path with a compliant layer over said interconnecting layer (via compliant layer bump,10 ) providing a force causing engagement (via spring) of at least said first spaced apart regions and said bond pads.

Claims 9,10,14, and 15 rejected under 35 U.S.C. 102(b) as being anticipated by Blanton (US 5,220,200).

Blanton (Fig 2) disclose an interconnecting layer for use in a semiconductor package which comprises, an electrically insulating layer (30; Column 6, Lines 48-49), electrically conductive paths (Column 4, Lines 11-12), each paths having a first and second spaced apart region thereon, said second spaced apart region of each path having a compliant bump (20) having a height greater than all other structures on said

layer, and a standoff (50; 40c-f) disposed on said layer and having a height above said layers and less than said bump; wherein said layer is inherently flexible.

Claims 22-31 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Potter (US 6,028,437).

***Response to Arguments***

Applicant's arguments with respect to claims 1-4 and 9-16 have been considered but are moot in view of the new ground(s) of rejection. Claims 22-31 were copied from the Potter reference to invoke interference, however the requirements set forth in the previous office action has not been met. Therefore applicant's entitlement to an interference has not been established. As such, the potter reference is still applicable to claims 22-31 since the claims are drawn to the same subject matter.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Love (US 5,477,160) teaches solder as a material for a compliant bump.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Mitchell whose telephone number is (703) 305-0244. The examiner can normally be reached on M-F 10:30-8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L.Talbott can be reached on (703) 305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3230 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



JMM  
December 30, 2002



DAVID L. TALBOTT  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800